

این دیتاشیت توسط توکل الکترونیک تهیه و ارائه شده است.
جهت مشاهده قیمت، موجودی و ثبت سفارش این قطعه به وبسایت توکل الکترونیک مراجعه فرمایید.



مشاهده قیمت و خرید
برای خرید و مشاهده سایر محصولات کلیک کنید

TEMIC
Semiconductors

SMD/SMU15N05

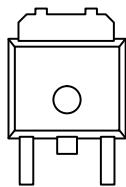
N-Channel Enhancement-Mode Transistors

Product Summary

$V_{(BR)DSS}$ (V)	$r_{DS(on)}$ (Ω)	I_D^a (A)
50	0.10	15

175°C Rated
Maximum Junction Temperature

TO-252



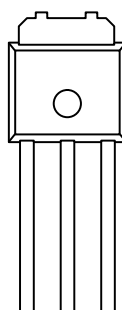
G D S

Top View

Drain connected to Tab

Order Number: SMD15N05

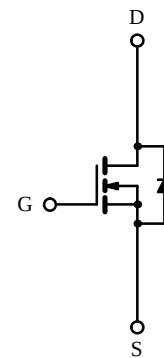
TO-251



G D S

Top View

Order Number: SMU15N05



N-Channel MOSFET

Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter		Symbol	SMD15N05	SMU15N05	Unit
Drain-Source Voltage		V _{DS}	50	50	V
Gate-Source Voltage		V _{GS}	± 20	± 20	
Continuous Drain Current ^b	T _A = 25°C	I _D	3.3 ^b	2.3 ^c	A
	T _A = 100°C		1.9 ^b	1.3 ^c	
Pulsed Drain Current (maximum current limited by package)		I _{DM}	24	24	
Power Dissipation	T _C = 25°C	P _D	40	40	W
	T _A = 25°C		2.0 ^b	1.0 ^c	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 175		°C
Lead Temperature (1/16" from case for 10 sec.)		T _L	300		

Thermal Resistance Ratings

Parameter	Symbol	Typical	Maximum	Unit
Junction-to-Ambient Free Air, PC Board Mount	R_{thJA}	50	60	$^\circ\text{C/W}$
Junction-to-Ambient Free Air, Vertical Mount			125	
Junction-to-Case	R_{thJC}		3.0	

Notes:

- Calculated Rating for $T_C = 25^\circ\text{C}$, for comparison purposes only. This cannot be used as continuous rating (see Absolute Maximum Ratings and Typical Characteristics).
- Surface mounted on PC board.
- Free air, vertical mount.

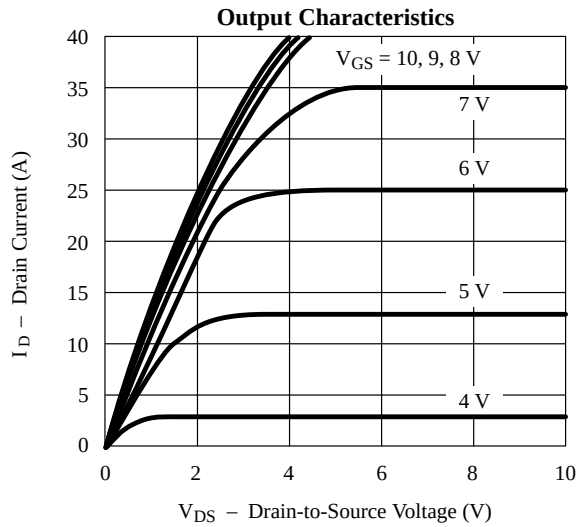
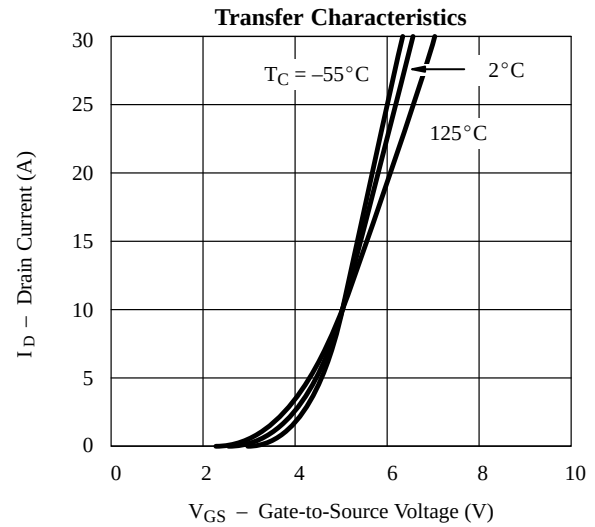
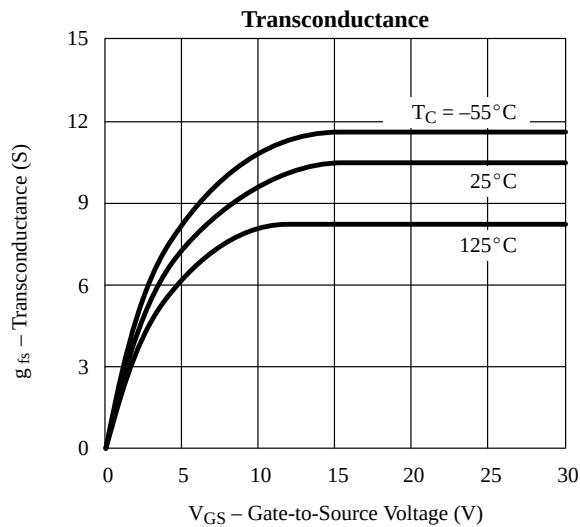
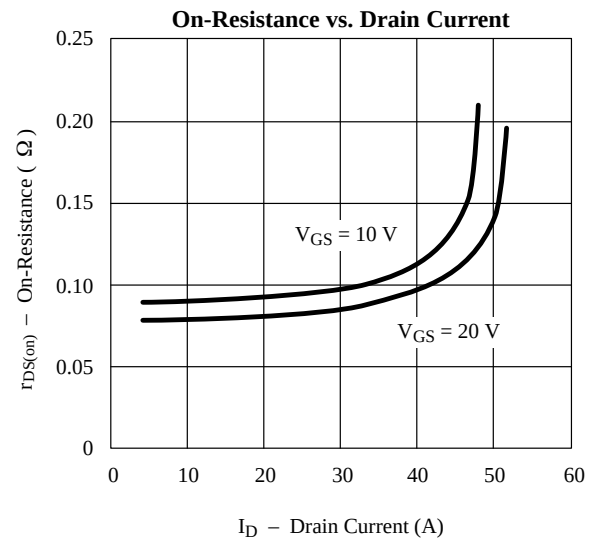
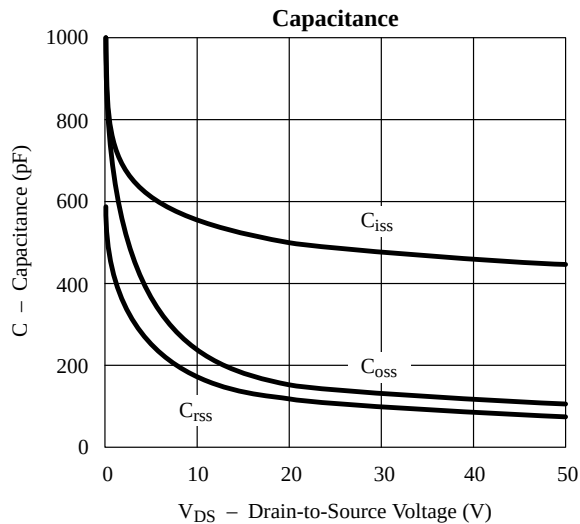
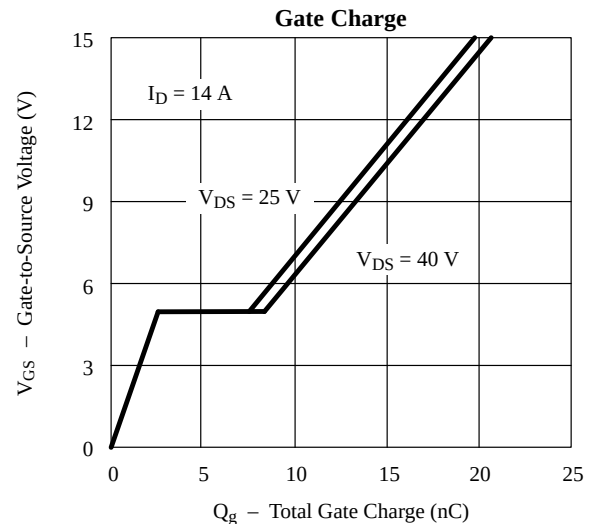
Specifications ($T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit	
Static							
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 250 μA	50			V	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	2.0		4.0		
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 20 V			± 100	nA	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 40 V, V _{GS} = 0 V			25	μA	
		V _{DS} = 40 V, V _{GS} = 0 V, T _J = 125°C			250		
On-State Drain Current ^b	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	15			A	
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 10 V, I _D = 7.5 A		0.07	0.10	Ω	
		V _{GS} = 10 V, I _D = 7.5 A, T _J = 125°C		0.13	0.18		
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 7.5 A	3.0	4.8		S	
Dynamic							
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		550		pF	
Output Capacitance	C _{oss}			320			
Reverse Transfer Capacitance	C _{rss}			100			
Total Gate Charge ^c	Q _g	V _{DS} = 25 V, V _{GS} = 10 V, I _D = 15 A		15	30	nC	
Gate-Source Charge ^c	Q _{gs}			3.5			
Gate-Drain Charge ^c	Q _{gd}			5			
Turn-On Delay Time ^c	t _{d(on)}	V _{DD} = 25 V, R _L = 1.67 Ω I _D ≈ 15 A, V _{GEN} = 10 V, R _G = 25 Ω		15	30	ns	
Rise Time ^c	t _r			50	85		
Turn-Off Delay Time ^c	t _{d(off)}			80	90		
Fall Time ^c	t _f			80	110		
Source-Drain Diode Ratings and Characteristics							
Continuous Current	I _S		SMD15N05		3.3	A	
			SMU15N05		1.0		
Pulsed Current	I _{SM}				24		
Forward Voltage ^b	V _{SD}	I _F = 3.3 A, V _{GS} = 0 V			1.8	2.3	V
Reverse Recovery Time	t _{rr}	I _F = 3.3 A, dI _F /dt = 100 A/μs			65		ns
Reverse Recovery Charge	Q _{rr}				0.16		μC

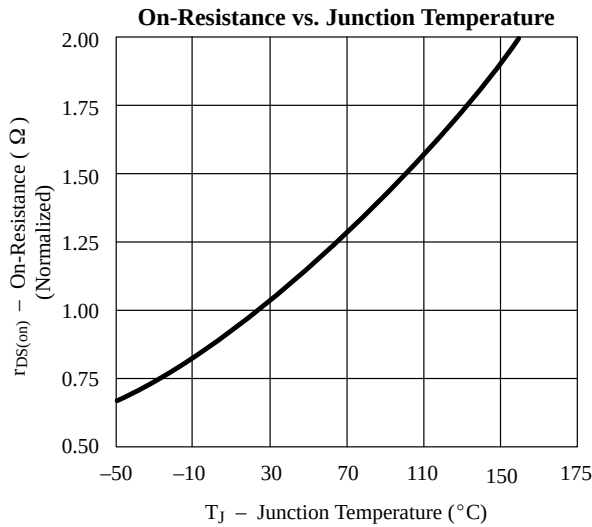
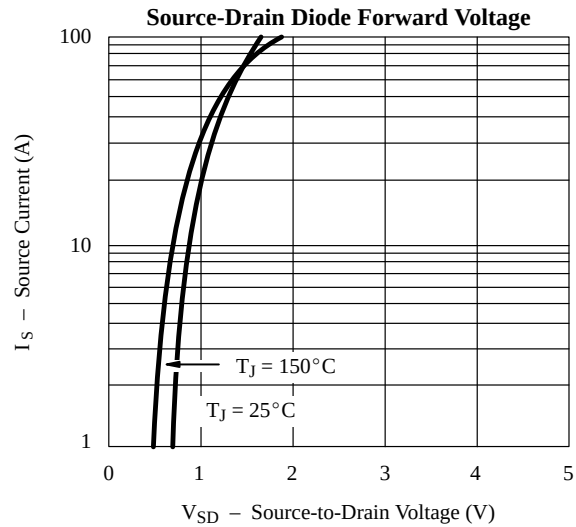
Notes:

- For design aid only; not subject to production testing.
- Pulse test; pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.
- Independent of operating temperature.

Typical Characteristics (25°C Unless Otherwise Noted)



Typical Characteristics (25°C Unless Otherwise Noted)



Thermal Ratings (Surface Mounted on PC Board)

